

### **REMARKS**

Claims 3, 4, 6-15, 17, and 19-20 are currently pending in the present application. Support for new claim 20 can be found in claims 3 and 6. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

### **Issues under 35 U.S.C. § 103(a)**

Claims 3, 4, 6-15, 17, and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Specification No. JP2003-277111A (hereinafter referred to as JP '111).

Applicants respectfully traverse this rejection.

### **Legal Standard for Determining Prima Facie Obviousness**

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

*Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

#### The Present Invention

Independent claim 3 relates to a cement composition comprising 100 parts by weight of a cement and 0.05 to 10 parts by weight of calcium hydroxide particles having an average particle diameter of 2.5  $\mu\text{m}$  or less as a cement setting accelerator for shortening the initial and final setting times of said cement composition. Claim 4 is directed to a process for manufacturing a cement composition comprising adding a water slurry of calcium hydroxide particles having an average particle diameter of 2.5  $\mu\text{m}$  or less as a cement setting accelerator for shortening the initial and final setting times of said cement composition to a cement.

#### Distinctions over the Cited References

Citing to a computer-generated translation of JP '111, the Examiner points out that there is a teaching of adding 0.2-10 parts by mass of a hardening accelerator, for instance, slaked lime, also known as calcium hydroxide, to 100 parts by mass of cement. Upon review, it is seen that JP '111 discloses a curing accelerator containing slaked lime and at least one selected from the group consisting of thiosulfate, formate, nitrate and nitrite and a cement composition comprising 0.2 to 10 parts by mass of this curing accelerator and 100 parts by mass of cement.

As for the above slaked lime, JP '111 discloses that, as for the degree of fineness of the slaked lime powder, its Blaine specific surface area (JIS R5201) may be  $3,000 \text{ cm}^2/\text{g}$  or more, which is the same as that of cement but preferably  $5,000 \text{ cm}^2/\text{g}$  or more, more preferably  $6,000 \text{ cm}^2/\text{g}$  or more because it shows a greater curing acceleration function as it is finer (paragraph [0006]).

Experiment Nos. 1-1 and 1-12 of Example 1 of JP '111 present an example where no curing accelerator is used and an example where only slaked lime (A-3, Blaine specific surface area of  $6090 \text{ cm}^2/\text{g}$ ) is used as a curing accelerator, respectively (both are Comparative Examples). From the evaluation of mortar compressive strength ( $\text{N}/\text{mm}^2$ ), the curing acceleration effect of slaked lime is slightly observed when the material age is 1 day, but the existence of slaked lime retards curing when the material age is 28 days. That is, slaked lime having a Blaine specific surface area of  $6,090 \text{ cm}^2/\text{g}$  does not show a curing accelerating effect by itself.

Calcium hydroxide particles used in the present invention have a small average particle diameter of  $2.5 \text{ }\mu\text{m}$  or less. This average particle diameter is equivalent to a Blaine specific surface area of about  $40,000 \text{ cm}^2/\text{g}$  or more. JP '111 fails to disclose such calcium hydroxide fine particles as recited in claim 3 having a particle size of  $2.5 \text{ }\mu\text{m}$  or less.

JP '111 discloses that a cement curing promotion effect is obtained by using a combination of slaked lime having the above Blaine specific surface area and a thiosulfate or the like as obvious from other experiments of Example 1 and fails to disclose that the above effect is obtained by using only slaked lime as recited in new claim 20.

Therefore, the subject matter of claims 3, 4, 6-15, 17, and 19-20 of the present application is not obvious over the cited reference.

Furthermore, enclosed herewith is a 37 CFR § 1.132 Declaration of Hiroyoshi Kato, one of the present inventors. The Examiner is respectfully requested to review the enclosed Declaration of Hiroyoshi Kato as it provides strong evidence of the patentability of the present invention.

In the enclosed Declaration, additional test data are set forth. More specifically, the enclosed Declaration includes a table (Table 1) and graphs (Figs. 2 and 3), which show the relationship between the particle diameter and Blaine value (specific surface area) of calcium hydroxide in the present invention and its effect. Fig. 4 is a graph showing data on JP '111. For the Examiner's information, Example 16 in the enclosed Declaration differs from Example 16 of the present application, and the dotted line in Fig. 4 shows a position corresponding to an upper limit value (2.5  $\mu\text{m}$ ) of average particle diameter of calcium hydroxide in the present invention.

As shown, the specific surface shown in JP '111 completely differs from the Blaine specific surface area in the present invention. That is, as shown in Fig.1 of the enclosed Declaration, Blaine specific surface areas of "6,000  $\text{m}^2/\text{g}$ " and "8000  $\text{m}^2/\text{g}$ " are equivalent to average particle diameters of about 13  $\mu\text{m}$  and about 11  $\mu\text{m}$ , respectively.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, JP '111 fails to disclose all of the claim limitations of independent claims 3, 4, and 20, and those claims dependent thereon. Accordingly, the reference does not render the present invention obvious.

Furthermore, the cited reference or the knowledge in the art provides no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

### CONCLUSION

In view of the above, Applicants believe that the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie, Reg. No. 42,874, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 8, 2009

Respectfully submitted,

By 

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Attachment: 37 CFR § 1.132 Declaration of Hiroyoshi Kato